REMARKS

This responds to the Final Office Action mailed on May 17, 2005.

Claims 1-6 and 9-32 are pending in this application.

§101 Rejection of the Claims

Claims 1-6, 9-10, 15-20 and 27-32 were rejected under 35 U.S.C. § 101 because the claims invention is directed to non-statutory subject matter. Applicants would like to point out that it has long been established in the law that software is patentable. The courts have consistently ruled that software is akin to a logical machine, which is per se patentable subject matter. Therefore, Applicants believe the Examiner is misapplying and/or misinterpreting the law with respect to software inventions and claim interpretation.

More specifically, the Examiner's attention is directed to MPEP 2106(c) (2), where it is stated that for "for purposes of a 35 U.S.C. 101, analysis, it is of little relevance whether the claims is directed to a machine or a process. *Emphasis added.* The legal principles are the same. *AT&T Corp. v. Excel Communications, Inc.* Again, Applicants would like to direct the Examiner's attention to MPEP 2106(a), the second full paragraph where it is stated: "a claimed computer-readable medium encoded with a computer program *is a computer element* which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, *and is thus statutory.*" *Emphasis Added.* This section of the MPEP defines a computer element as structure and a computer-readable medium is a computer element.

Therefore, Applicants do not understand the present rejections being asserted under 101. If there is a specific court decided opinion or if the MPEP has been revised beyond the eighth edition with changes in this area, then Applicants respectfully request that the Examiner provide some foundation or basis for the assertions being made by the Examiner that physical structure beyond computer-readable medium is a requirement because Applicants do not believe this is a proper statement of the law.

Furthermore, the structures in Applicant's preambles are sufficient to provide structure for the claim bodies. Once again, the Examiner's attention is directed to MPEP 2111.02 "Effect

of Preamble." Here it is stated: "any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation." *Emphasis added. Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.,* 868 F.2d 1252, 1257 (Fed. Cir. 1989). There is little doubt that claims recite structure, namely "computer-readable medium" and that this structure limits the positively claimed language of the rejected claims to computer implemented embodiments. The entire MPEP section 2106 discusses permissible software inventions, which include data structures where only the preambles of the data structures provide any structure. Structure is provided by way of the computer-readable medium and that is a computer element, which the entire MPEP cites as permissible. Still further, the structure is sufficient if it resides solely in the preamble of the claim.

The test the Examiner must use with respect to § 101 is whether the claim as a whole produces a useful concrete and tangible result. It has long been established that software implementations including programs and codes embodied in a computer media are inventions that are entitled to patent protection and thus are considered patentable subject matter. (*In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994) (*en banc*)). In fact, if a claimed invention as a whole produces a useful concrete and tangible result, then the invention is patentable. (*State Street Bank & Trust v. Signature Financial Group,* 149 F.3d 1368 (Fed. Cir. 1998). Thus, even business methods embodied in a computer media are properly classified as processes entitled to patent protection under § 101.

Accordingly and very clearly, the claims are directed on their face toward patentable subject matter, since the claims are embodied in a computer-readable medium and the claims are directed to threading non-threaded applications to produce threaded results in that computer-readable medium. The structures of the computer-readable medium which are present in the preambles are limitations on the structure of the claims, pursuant to settled law.

Furthermore, the courts have with unanimity held that § 101 rejections are to have very limited scope and application, and that the phrase "new and useful process, machine, manufacture, or composition of matter" shall have a very broad and expansive meaning to reflect Congress's intent when enacting the patent laws. To enforce this interpretation the courts have held that the Examiner has the burden of establishing a prima facie case that the claimed invention as a whole is directed solely to an abstract idea or to manipulate abstract ideas that do

not produce a useful result. Moreover, the Examiner must expressly state how the claim language is being used to support his/her § 101 rejection. Furthermore, only when a claim is devoid of any limitation to a practical application in the technological arts should it be rejected under § 101. (*In re Warmerdam*, 33 F.3d 1354 (Fed. Cir. 1994).

Applicants have demonstrated, even without amendments to the claims that the language of the claims are embodied in computer media and do produce practical results. As a further example, the Examiner's attention is directed to *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1358 (Fed. Cir. 1999) where the Court stated "transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces a 'useful, concrete and tangible result'."

Thus, Applicant asserts that the Examiner has misapplied § 101 and misinterpreted the law with respect to the effect of a claim's preamble. The rejected claims are directed to useful and concrete results, they are processed and housed within a computer-readable medium and these structures are clearly recited in the preambles which are positive and structural limitations of the overall claims. Accordingly, the rejections with respect to the claims 1-6, 9-10, 15-20, and 27-32 are not sustainable and should be withdrawn.

Additionally, if the Examiner continues to assert the 101 rejections then the Applicants respectfully request a specific legal foundation or citation that supports the Examiner's stated rationale, which appears to be that "computer-readable media" is not structure and that the structure has to reside in the body of the claim and not solely within the preamble. If this is a correct summary of the Examiner's rejection with respect to the rejected claims, then Applicants disagrees with this interpretation of the law because computer-readable media is structure and because the structure is sufficient placed in the preamble only.

§102 Rejection of the Claims

Claims 1-6, 9-15, 17-19 and 21-31 were rejected under 35 U.S.C. § 102(b) as being anticipated by Blelloch et al. (U.S. Patent No. 5,768,594) (hereinafter Blelloch). It is of course fundamental that in order to sustain an anticipation rejection that each and every element or step in the rejected claims must be taught or suggested in the cited reference.

The Examiner appears to assert that the programs of Blelloch are in fact non-threaded and thus continues to maintain that Blelloch anticipates Applicants' independent claims as written. As one example, the Examiner points Applicant to the reference in Blelloch where it is stated "The incoming program may be any sequential program that takes the form of some programming language that reveals the tasks to be performed by parallel processing but not the assignment (or mapping) of tasks to processors." Blelloch, col. 2, lines 19-23. First, Applicants respectfully disagree that a sequential program is by definition "non-threaded." In fact, all program code, threaded or non-threaded is to some degree sequential coded. Thus, this conclusion is overly broad and simplistic and Applicants do not agree with this statement. Second, the reference clearly indicates that the sequential programs reveal tasks to be performed by parallel processing.

Threaded applications may be sequentially coded but can co-exist and execute in duplicate with themselves within a processing environment without collisions. What is important is that threaded applications are capable of processing as duplicate instances within a same processing environment, the sequential nature of the coding offers no distinguishing characteristic when determining what is threaded and not threaded; it is the sequential nature of execution that is distinguishing.

The Blelloch reference clearly states the programs reveal tasks which are targeted for parallel processing. Applicants assert that this teaching is a teaching of threaded programs and not a teaching of non-threaded applications. What Blelloch does is take an execution sequence associated with parallel tasks from a threaded program and reorder that sequence to achieve improved parallelism for all the threaded tasks. Blelloch asserts that these threaded tasks were previously only assigned processors and scheduled for parallel execution once input data was supplied and once parallel processing was initiated. Blelloch, col. 2, lines 23-27. Support for this interpretation is further provided at column 2 lines 44-46 where Blelloch refers to the tasks as belonging to a "parallel program." In fact, Blelloch does this in other locations of its description. Again, Applicants continue to assert that Blelloch relies on threaded programs for its teachings. Blelloch provides novel dynamic scheduling and dynamic processor assignments to existing threaded programs. Blelloch does not provide any teaching where a non-threaded application can functionally become threaded. If Blelloch did have any such teaching, then it

would have had to describe how to avoid collisions when two programs execute in duplicate within the same environment and there is no such explanation or teaching in Blelloch.

Accordingly, Applicants disagree with the Examiner's interpretation of the programs recited in the Blelloch reference. Applicants believe the entire description of Blelloch is directed to re-sequencing tasks of a parallel program and dynamically providing processor assignments to those tasks for purposes of improving the parallelism of an existed threaded program. The title, abstract, and description completely comport with the interpretation being asserted by the Applicants.

Therefore, Applicants respectfully request that the rejections with respect to Blelloch be reconsidered and that the claims be allowed, since Blelloch fails to teach how a non-threaded application can be made to process in a parallel and threaded manner. Again, Blelloch is geared to improving a pre-existing threaded program and environment it is not in any manner geared toward creating a threaded environment from an non-threaded program.

§103 Rejection of the Claims

Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Blelloch in view of Shah et al. (US 2002/0035556) (hereinafter Shah). Claim 16 is dependent from amended independent claim 15; therefore, for the amendments and remarks presented above with respect to claim 15 the rejection with respect to claim 16 should be withdrawn.

Claims 20 and 32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Blelloch in view of Klein (U.S. Patent No. 6,185,590). Claim 20 is dependent from amended independent claim 18 and claim 32 is dependent from amended independent claim 30; thus, for the amendments and remarks presented above with respect to independent claims 18 and 30, the rejections of claims 20 and 32 should be withdrawn.

CONCLUSION

Applicants respectfully submit that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' attorney (513) 942-0224 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

ROBERTO GOMPERTS ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(513) 942-0224

Date 7-18-05

By _____
Joseph P. Mehrle
Reg. No. 45,535

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 18 day of July, 2005.

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